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**THE GENUS TINOBREGMUS (HOMOPTERA-
CICADELLIDAE) IN MEXICO.**

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The genus *Tinobregmus* was erected in 1894 by Van Duzee to include *vittatus* which he described from Florida. Three other species, *pallidus* Osborn, *invenustus* Lawson and *viridescens* DeLong, have been described since that time. Lawson reviewed and illustrated the North American species in 1932.¹ All of these species are southern in distribution, *viridescens*, which is associated with the deciduous forest, extends as far north as Missouri and Southern Illinois. The other species occurring in the United States are either coastal, desert or semidesert inhabitants.

Apparently no previous study has been made of the Mexican species of this genus. Collections from Mexico and Northern Guatemala have brought to light six species and one variety, all of which are new except one, *vittatus*. Most of the Mexican species occur on either the low or high desert. Two species, *macullellus* and *piperatus*, are found on the more luxuriant vegetation in the tropical areas.

Tinobregmus vittatus Van Duzee.

Tinobregmus vittatus V.D. Bul. Buf. Soc. Nat. Sci., 5: 214.
1894.

A large robust species with variable markings. Length, female 5-6.5 mm., male 4-4.5 mm.

The vertex is blunt, often angled, about one-fourth of which is produced beyond the anterior margins of the eyes.

Color: Females yellow marked with black and brown. Ver-

¹ Lawson, P. B. The Genus *Tinobregmus* (Homoptera-Cicadellidae) Anns. Ent. Soc. Amer., 25: 359. 1932.

tex usually with a pair of black spots at apex and a pair surrounding ocelli. Pronotum usually with six longitudinal dark stripes. Elytra variable in color. In well-colored specimens the veins are wide and pale and the cells between are some shade of brown. Face usually with two broad brown longitudinal stripes. Males usually black vertex marked with small light spots between the eyes. Pronotum yellow, lateral margins black. Elytra yellow with a black band across apex which is less than one-fourth the length of elytra. Face black. A few males resemble the females in color.

Genitalia: Female last ventral segment with posterior margin roundedly produced forming a lobe on median half. Male plates elongate and narrow.

This species has been collected in abundance along the border at both Laredo and Brownsville, Texas. It occurs on desert plants at low altitudes on both sides of the Rio Grande.

Tinobregmus vittatus var. **clavatus**, n. var.

Resembling *vittatus* in general form but with blunter vertex, shorter elytra, and heavier color markings. Length of female 6 mm.

Vertex similar to *vittatus* but more blunt, elytra short covering only a portion of the sixth segment.

Color similar to *vittatus*, except that the four longitudinal stripes on the pronotum are much broader and darker extending on to clavus and forming a solid dark brown clavus except for one light vein. The other cells of the elytra are also dark brown, the veins are pale.

Female last ventral segment almost truncate, posterior margin broadly, slightly produced.

Holotype female and paratype female collected at Fortin, Vera Cruz, October 9, 1941, by Caldwell, Good, Plummer and DeLong. These occur at an elevation of 2,500 feet and are on a rather luxuriant vegetation.

Tinobregmus brevis, n. sp.

Resembling *vittatus* in general form and appearance but shorter. Length, female 5 mm.; male 4 mm.

Vertex blunt, but slightly angled, more than four times as long as width at base and three times as broad at apex as at base. Elytra in female exposing seventh and eighth abdominal segments and last dorsal segment in male.

Color: Female pale with dark markings. Vertex with ocelli, a spot between them and a marginal spot in front of each, dark brown or black. Scutellum pale with four longitudinal stripes. Elytra mottled with brown, veins conspicuous. Male with vertex and face black, pronotum orange yellow with a black spot on each lateral margin. Elytra orange yellow, the basal fourth black, exposing tip of abdomen.

Genitalia: Female last ventral segment with posterior margin faintly concave either side of a median slightly produced lobe which appears to be slightly notched at center. Male plates very slender and elongate.

Holotype female, allotype male and male and female paratypes collected east of Saltillo, Coah.; elevation 5,000 feet, September 23, 1941, by Good, Caldwell and DeLong, from plants on the high desert.

***Tinobregmus invicus*, n. sp.**

Resembling *vittatus* in general form but with distinct coloration. Length, female 6 mm.; male 5 mm.

Vertex blunt at apex, about three times as long as basal width between eyes, about twice as wide at apex as at base and produced a little before anterior margins of the eyes.

Color: Female yellow to pale brown. Vertex with a pair of black markings on anterior portion on the ocelli, a pair on middle and another at base. Pronotum pale with dark mottled spots. Elytra brown, veins pale, interrupted at short intervals by brown marks. A few black markings along commissure and apical portion darker. Male vertex pale with black spots similar to female. Pronotum and scutellum black with few pale markings. Elytra reddish brown with dark markings along commissure on apical half and apical fourth of elytra darker. Veins inconspicuous.

Genitalia: Female last ventral segment broadly roundedly produced with a slightly emarginate portion about half-way on either side of middle. Male plates long, slender, strap-like, appearing twisted at apex.

Holotype female, allotype male, and male and female paratypes collected at Ixmiquilpán, Hgo., elevation 5,730 feet, September 27, 1941, by Caldwell, Good and DeLong. Male and female paratypes collected at Tasquillo, Hgo., elevation 5,600 feet, October 29, 1941, by Good and DeLong. All were taken on high desert.

***Tinobregmus maculellus*, n. sp.**

Resembling *viridescens* more closely in form but with distinct coloration. Length, female 6.5 mm.; male 5 mm.

Vertex produced and bluntly angled at apex, produced about one-third its length beyond the anterior margins of the eyes, about four times as long as basal width between eyes and twice as broad at apex as at base. Elytra long exposing only a portion of pygofer and the ovipositor in the female and longer than the abdomen in the male.

Color: Female pale gray mottled with brown and black. Vertex with a pair of elongate dark spots near apex and a similar pair on basal half. Pronotum pale with dark spots and elongated markings. Elytra pale, veins pale often crossed by dark markings. The corium, apical part and a portion of clavus mottled with dark brown or black. Male black and orange. The vertex, pronotum and scutellum are black. Elytra orange on anterior and costal portion. The commissure is broadly black and the apical third is black.

Genitalia: Female last ventral segment with posterior margin broadly roundedly produced and shallowly emarginate either side of median produced lobe. Male plates elongate, broadened at base then narrowed to a slightly broadened and curved apex.

Holotype female, allotype male, and male and female paratypes collected at Orizaba (K. 280), Vera Cruz, elevation 7,700 feet, October 17, 1941; paratypes of both sexes were also collected at Puebla, Pue., elevation 8,500 feet, October 18, 1941, by Good, Caldwell, Plummer and DeLong, and at Tehuacán, Pue., elevation 7,000 feet, October 17, 1941. This species has been taken only on high semi-desert.

***Tinobregmus piperatus*, n. sp.**

Resembling *maculellus* in general form with vertex even more produced and black in color with minute pale spots. Length, female 6.5-7 mm.; male 5-5.5 mm.

Vertex blunt, produced about one-third its length before the anterior margins of the eyes. About four times as long as basal width and more than twice as broad at apex as basal width. Elytra long exceeding abdomen in both sexes, the ovipositor slightly exceeding elytra in the female.

Color: Female vertex black with a pale spot surrounding either ocellus, a broken white transverse band at anterior mar-

gin of the eyes and a pale stripe along either eye on basal portion. Pronotum black with seven or eight longitudinal pale stripes. Scutellum black with a pale longitudinal stripe just about half-way between median line and each lateral angle and a pale spot at apex. Elytra black rather uniformly marked with minute pale spots. Face black with a conspicuous white stripe along either eye. Genae white. Male black with few pale markings. The white band between anterior margins of eyes is faintly indicated and the white spots on elytra are abundant but less conspicuous than in the female. The pale line along eyes on face less conspicuous and the genae black.

Genitalia: Female last ventral segment with posterior margin rather strongly, roundedly produced on median half to form a lobe which is slightly notched at middle. Male plates long and slender, narrowed on apical half, then slightly enlarged at apex.

Holotype female, allotype male, and male paratypes collected at Fortín, Vera Cruz, elevation 2,500 feet, October 9, 1941. Paratype male collected at Orizaba, Vera Cruz, elevation 4,100 feet, October 8, 1941, by Plummer, Good, Caldwell and DeLong. All specimens were found on luxuriant vegetation.

***Tinobregmus angustatus*, n. sp.**

Resembling *piperatus* in general form but with a more sharply angled vertex, an elongated slender body and a different coloration. Length, female 6 mm.; male 5.5 mm.

Vertex produced almost one-fourth its length before the anterior margins of the eyes and more than four times as long as basal width between the eyes. Elytra as long as ovipositor in female and longer than abdomen in male.

Color: Female dark brown with black markings. Vertex yellow with a median apical black spot and an angled black spot either side at anterior margins of the eyes. A pair of elongate brown spots also occur at about the middle between the eyes. Pronotum dark brown with eight pale longitudinal narrow stripes. Scutellum dark brown with basal angles darker, a pale line each side equidistant from each margin and from each other. Elytra brownish subhyaline, veins black, mottled with darker brown spots especially on clavus. Face dark brown with pale arcs, genae pale. Male almost entirely black in color. Vertex with a pair of transverse white spots at apex, an interrupted white transverse band just posterior

to anterior margins of the eyes and a white line along either eye posterior to this band. Elytra with brownish streaks especially on the clavus.

Genitalia: Female last ventral segment with posterior margin produced on median half to form a median lobe. Male plates elongate, narrow, apical half more narrowed with a curved, enlarged apex.

Holotype female, allotype male, and male paratype collected at Patulul, Guatemala, March 9, 1942, at an elevation of 1,200 feet by Dr. C. C. Plummer. Male paratype collected at Lake Petén, Guatemala, November 17, 1925, by Dr. Dampf (M.F. 809). No Mexican records are at hand but this species undoubtedly occurs in those states adjoining Guatemala.

Trichoptera Notes.—The following interesting and unusual records were called to the writer's attention by Dr. H. H. Ross, who identified the material: *Ochrotrichia stylata* (Ross), collected along the Sevier River near Circleville, Utah, July 10, 1943. Material collected in trap light and sweepings at Circleville at this time also included *Tascobia brustia* (Ross) and *Hydroptila argosa* Ross; the latter species also was collected at Provo, June 19, 1941. *Hydroptila arctica* Ross was taken at Provo, Utah, August 6, 1942, and Vernal, Utah, on June 27, 1943. *Leucotrichia limpia* Ross was taken at Hurricane, Utah, April 25, 1941. *Rhyacophylax signatus* (Banks) was collected by sweeping in large numbers of Trichoptera specimens which flew to the car headlights near Moab, Utah, and from sweeping *Salix* with an insect net, along the Colorado River after dark on the night of June 26, 1943.—G. F. KNOWLTON, Utah Agricultural Experiment Station, Logan, Utah.

Eastern Record for California Tortoise-shell.—On September 4, 1945, I found on the shore of Lake Michigan, two miles north of Ludington, Michigan, four specimens of the California Tortoise-shell (*Nymphalis californica* Boisd.). They were wet, obviously having been recently washed ashore. One specimen was badly battered, two had several small nicks, and the last was in good condition. They were found several rods apart.

So far as we can discover, this type of butterfly has never been found east of the Rocky Mountains.—CLIFFORD BORAM, JR. (Age 11).

(A promising lad!—J. R. T.—B.)